

THIRD WHEEL COLLAPSING DEVICE FOR A GOLF CLUB CART

BACKGROUND OF THE INVENTION

5 1. Field of the Invention

This invention relates to a third wheel collapsing device for a golf club cart, particularly to one conveniently collapsible and stable after expanded out.

2. Description of the Prior Art

10 A conventional golf club cart shown in Fig. 1 includes a main frame 10, a support member 11 respectively fixed on an upper portion and a lower portion of the main frame 10, an intermediate support frame 12 connected with an intermediate portion of the
15 main frame 10 and extending to two sides of the main frame 10 and pivotally connected with two rear wheels 13, a handle 14 fixed on an upper end of the main frame 10 for pushing or pulling the golf club cart 1, and a third wheel supporter 15 having its lower end fixed firmly
20 with the bottom end of the main frame 10 with a bolt 16 having its one end pivotally connected with a third wheel 17.

Though the conventional golf club cart 1 is very stable in movement, but still has some drawbacks as
25 described below.

1. The third wheel supporter 15 is fixed firmly

by the bolt 16, and it must be expanded or collapsed with a user's body bent for screwing the bolt 16, inconvenient to handle.

2. Should the bolt 16 be not screwed tight, it
5 might easily fall off the third wheel supporter 15, and if worse, may be lost in using the golf club cart.

3. If the third wheel collapsing device according to the invention is applied to a three folding golf club cart, the rotatable third wheel 17
10 may affect the collapsed size of the golf club cart, becoming rather large as shown in Fig. 2.

Another conventional golf club cart shown in Fig. 3 includes a third wheel support frame 20, and a locking unit 3 provided between the main frame 10 and the third
15 wheel support frame 20. The locking unit 3 controls relative location between the third wheel support frame 20 and the main frame 10, having a push button 30 for fixing firmly the third wheel support frame 20 at the inside of the main frame 10, and when the third wheel is
20 provided separable to slide out from between the main frame 10 with the push button 30 pressed, there should be enough space for the third wheel to slide down from the inside of the main frame 10. Nevertheless, the push button 30 itself has no function to tightly press the third
25 wheel support frame 20 so the third wheel cannot be stably run straight forward.

SUMMARY OF THE INVENTION

The objective of the invention is to offer a third wheel collapsing device for a golf club cart, which can secure the third wheel stably after expanded out, and
5 easily collapse the third wheel.

The feature of the invention is a third wheel support unit consisting of a connect base having a fitting member with an upper inclined surface, a lock block on the upper inclined surface, a spring chamber continually
10 formed in both the fitting member and the lock block for receiving a spring therein, a control rod extending from under through the connect base, the fitting member and the lock block to expose out of the lock block and screwed with a nut stably. Further the control rod has its
15 lower end pivotally connected with an eccentric plate. When the eccentric plate is swung up, the control rod is moved down so that the lock block is also moved down and also slides a little on the upper inclined surface of the fitting member, becoming not aligned with the fitting
20 block. Then the lock block may firmly contact the inner surface of the main frame of a golf club cart to secure firmly the third wheel support unit with the main frame. If the eccentric plate is swung down, the control rod is released to move up by recovered elasticity of the spring,
25 with the lock block also moved up to separate from the inner surface of the main frame, freeing the third wheel

support unit from the main control, i.e. permitting the third wheel collapsible from the golf club cart.

BRIEF DESCRIPTION OF DRAWINGS

This invention will be better understood by
5 referring to the accompanying drawings, wherein:

Figure 1 is a perspective view of a first conventional golf club cart;

Figure 2 is a side view of the first conventional three folding golf club cart in a collapsed in three folds;

10 Figure 3 is a perspective view of a third wheel of another conventional golf club cart;

Figure 4 is a perspective view of a golf club cart expanded out in the present invention;

15 Figure 5 is a perspective view of a third wheel of the golf club cart in the present invention;

Figure 6 is an exploded perspective view of the third wheel and a third wheel support unit in the present invention;

20 Figure 7 is a perspective view of the third wheel connected with the third wheel support unit in the present invention;

Figure 8 is a perspective view of the third wheel together with the third support unit collapsed from the main frame of a golf club cart in the present invention;

25 Figure 9 is a cross-sectional view of the third wheel combined with the third wheel support unit in the

present invention;

Figure 10 is a partial magnified view of Fig. 9;
and,

Figure 11 is a partial magnified view of the third
5 wheel support unit being collapsed from the golf club
cart in the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMODIMENT

A preferred embodiment of a third wheel
10 collapsing device for a golf club cart in the present
invention, as shown in Fig. 4, includes a main frame 40,
an intermediate support frame 42, two rear wheels 43, a
handle 44, a third wheel support unit 5 as main
components combined together.

15 The main frame 40 has its upper portion provided
with an upper support member 41 and its lower portion
provided with a lower support member 41 for supporting
a golf club bag between the two support members 41, 41.

The intermediate support frame 42 is positioned at
20 the intermediate portion of the main frame 40, extending
to the right side and the left side of the main frame 40
for respectively connecting pivotally with the rear wheel
43.

The handle 44 is fixed on an upper end of the main
25 frame 40 for a user to hold for moving the golf club cart
4.

The third wheel support unit 5, as shown in Figs. 5 and 6, consists of a U-shaped frame 50, an arm 52, a connect base 53, a control rod 54, and a lock block 56.

5 The U-shaped frame 50 has an opening with a third wheel 51 pivotally connected therein, an arm 52 extending out from the closed end and having a center hole 521 in an intermediate portion and two sidewise holes 522 in a side surface.

The connect base 53 has a hollow interior to fit
10 around the arm 52 as shown in Fig. 7, having a fitting member 530 extending obliquely from an upper end of the connect base 53 and having an upper inclined surface 531 and a center lengthwise hole 532 to communicate with the center hole 521 of the arm 52, as shown in Fig.
15 9. Further, the U-shaped frame 50 has two sidewise lock holes 533 at two sides of the lower end of the center hole 521 aligned with the two sidewise holes 522 of the arm 52. Then bolts 534 screw in the lock holes 533 and the sidewise holes 522 so as to secure the connect base 53
20 with the arm 52 stably. Further, a spring chamber 535 is formed in a top portion of the fitting member 530 for receiving a spring 536 therein.

The control rod 54 is elongate, having a lower end pivotally connected with an eccentric plate 55 and an
25 upper threaded end 540, extending from under through the center hole 521 of the arm 52 and then through the

center hole 532 of the fitting member 530.

The lock block 56 is positioned on the inclined surface 531 of the fitting member 530 having a center hole 560 aligning with the center hole 532 of the fitting member 530, as shown in Fig. 9. The center hole 560 has its lower portion formed with a spring chamber 561 aligned with the spring chamber 535 of the fitting member 530 for receiving the upper portion of the spring 536 therein. Then the control rod 54 continues to extend through the center hole 560 out of the center hole 560, with a washer 562 and a nut 563 to screw with the threaded end 540 of the control rod 54 to lock it stably.

Figs. 7 and 10 show the third wheel support unit 5 combined together, and the control rod 54 has its lower portion controlled by the eccentric plate 55, so when the eccentric plate 55 is swung up, the control rod 54 is moved down together with the lock block 56, which also moves down and alters its position a little to become not aligned with the fitting member 530 owing to the inclined surface 531. The control rod 54 has a characteristic of eccentric movement due to the lock block 56. On the contrary, if the eccentric plate 55 is swung down from the swung-up position, the lock block 556 is pushed back upward by recovered elasticity of the spring 536 to the original position.

Therefore, when the fitting member 530 on the

connect base 53 and the lock block 56 are inserted in the hollow interior of the lower portion of the main frame 40, swinging up the eccentric plate 55 can move down the control rod 54, with its upper end screwed with the lock block 56 all together moved down likewise, so that the lock block 56 may contact securely with the inner surface of the main frame 40, assembling fixedly the third wheel support unit 5 with the main frame of a golf club cart, as shown in Fig. 10.

On the contrary, if the third wheel support unit 5 is to be disassembled from the main frame 40, as shown in Fig. 11, the eccentric plate 55 is swung down from the assembled position shown in Fig. 10 to release the control rod 54, which then moves up to let the spring 536 recover its elasticity of the spring 536 in the spring chamber 561, with the lock block 56 moving up at the same time to separate from the main frame 40 automatically, i.e. permitting the third wheel support unit 5 disassembled (or collapsed) from the main frame 40.

Thus the third wheel collapsing device for a golf club cart in the invention has the following advantages.

1. Its handling is simple, by the eccentric plate swung to move the control rod for locking or unlocking the third wheel support unit with main frame, improving the drawback of the bolt used in the

conventional golf club cart.

2. The third wheel support unit has good stability, without possibility of falling off the main frame, owing to the spring having two-direction
5 elastic positioning force, even if the golf club cart should move on rugged surfaces.

While the preferred embodiment of the invention has been described above, it will be recognized and understood that various modifications may be made
10 therein and the appended claims are intended to cover all such modifications that may fall within the spirit and scope of the invention.